

Claims 1-6 stand rejected under 35 USC §102(b) as being unpatentable over U.S. Patent Number 5,766,691 to Arnold et al. (hereinafter “Arnold”).

Claims 1-2 and 5 stand rejected under 35 USC §102(b) as being unpatentable over U.S. Patent Number 5,150,748 to Blackmon et al. (hereinafter “Blackmon”).

Claims 1-6 stand rejected under 35 USC §102(b) as being unpatentable over U.S. Patent Number 5,485,671 to Larson et al. (hereinafter “Larson”).

ARGUMENT

The threshold issue under Section 102 is whether the Examiner has established a prima facie case for anticipation. “Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 U.S.P.Q. (BNA) 193 (Fed. Cir. 1983); *SSIH Equip. S.A. v. USITC*, 718 F.2d 365, 218 U.S.P.Q. (BNA) 678 (Fed. Cir. 1983)” *Lindemann Maschinenfabrik GmbH v. American Hoist And Derrick Company, et al.* 730 F.2d 1452, 1458, 221 U.S.P.Q. (BNA) 481. As stated in the MPEP, “[A] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)”. MPEP §2131.

ARNOLD

The Examiner has proposed that the Arnold reference describes the claimed invention. However, Arnold does not teach the limitation of “A heat pipe having at least one diamond element...” The Examiner does not identify Arnold as teaching said limitation. The only time a diamond element occurs in the identified passages of Arnold is as follows:

Composite enclosure 70 includes multichip module 72 that itself includes multiple integrated circuits that are formed on diamond substrate 74. (Col. 5 Line 60-63.)

And:

Radiator device 80 may itself be a diamond or a co-cured carbon-fiber composite structure that distributes the heat energy that comes from carbon fiber heat pipe76. (Col. 6 Line 1-4.)

As seen in the above-quoted portion of the reference, Arnold teaches the use of diamond as a substrate for a multiple integrated circuits and as a radiator device not as a part of a heat pipe. Further, nowhere in the Arnold reference is the limitations of “A heat pipe having at least one diamond element...” taught or even implied. Therefore, the Examiner has failed to show that Arnold sets forth each and every element of the claimed invention.

For the above reasons, Applicant respectfully submits that the 35 USC § 102 rejection of claims 1-6 based upon Arnold has been successfully traversed and that the rejections are improper and should be withdrawn.

BLACKMON

The Examiner has proposed that the Blackmon reference describes the claimed invention. However, Blackmon does not teach the limitation of “A heat pipe having at least one diamond element...” The Examiner does not identify Blackmon as teaching said limitation. Blackmon teaches:

Referring to FIGS. 4a, 4b, and 4c, several configurations, based upon the types of construction illustrated in FIGS. 1-3 are illustrated, Each configuration shown in FIGS. 4a-c may be woven-bonded or brazed to the metal portions of the heat pipe. Fig. 4a illustrates fibers 11 attached directly to armored plate 41. Armored plate 41 is in turn connected to attachment plates 43, which are in turn connected to heat pipes 45. (Col. 5 Line 19-26.)

As seen from this excerpt, Blackmon teaches that fibers (which may consist of diamond fibers) may be attached to the metal portion of a heat pipe by either a woven-bond or brazing. The Blackmon reference only teaches that materials may be attached to the exterior of a heat pipe. Further, nowhere in the Blackmon reference is the limitations of “A heat pipe having at least one diamond element...” taught or even implied. Therefore, the Examiner has failed to show that Blackmon sets forth each and every element of the claimed invention.

For the above reasons, Applicant respectfully submits that the 35 USC § 102 rejection of claims 1-2 and 5 based upon Blackmon has been successfully traversed and that the rejections are improper and should be withdrawn.

LARSON

The Examiner has proposed that the Larson reference describes the claimed invention. The Larson reference discloses the theory of Heat pipes and their inherent faults (Col.3 Line18-64). However, Larson does not disclose, "A heat pipe having at least one diamond element..." Therefore, the Examiner has failed to show that Larson sets forth each and every element of the claimed invention.

For the above reasons, Applicant respectfully submits that the 35 USC § 102 rejection of claims 1-6 based upon Larson has been successfully traversed and that the rejections are improper and should be withdrawn.

CONCLUSION

For the above reasons, Applicant respectfully submits that the 35 USC § 102 and 35 USC § 112 rejections have been traversed. Applicant respectfully requests that claims 1-6 be allowed over the prior art.

No additional fee is due.

On the basis of the above remarks, early consideration of this application and early allowance are respectfully requested.

Respectfully,

By



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What is claimed is:

1. (As Amended) A heat pipe having at least one diamond element through which at least a portion of heat flowing between a heat source and a ~~into or out of the~~ heat pipe passes wherein the heat source is an electronic device.
2. (As Amended) A heat pipe having multiple diamond elements through which at least a portion of heat flowing between a heat source and a ~~into or out of the~~ heat pipe passes.
3. (As Amended) A heat pipe having at least one diamond element through which at least a portion of heat flowing between a heat source and a ~~into or out of the~~ heat pipe passes wherein the heat source is an electronic device.
4. (As Amended) A heat pipe having multiple diamond elements through which at least a portion of heat flowing between a heat source and a ~~into or out of the~~ heat pipe passes, wherein the heat sources are electronic devices.
5. (As Amended) A heat pipe having at least one diamond element through which at least a portion of heat flowing between a heat source and a ~~into or out of the~~ heat pipe passes, the ~~principal function of the heat pipe~~ functioning ~~being~~ to improve thermal uniformity within the heat source.

6. (As Amended) A heat pipe having multiple diamond elements through which at least a portion of heat flowing between a heat source and a ~~into or out of the~~ heat pipe passes, the ~~principal function of the heat pipe~~ functioning ~~being~~ to improve thermal uniformity within and among the heat sources.